other such numerical terms referring to structures do not imply a sequence or order unless clearly indicated by the context.

[0056] When introducing elements or features of the present disclosure and the exemplary embodiments, the articles "a," "an," "the" and "said" are intended to mean that there are one or more of such elements or features. The terms "comprising," "including" and "having" are intended to be inclusive and mean that there may be additional elements or features other than those specifically noted. It is further to be understood that the method steps, processes, and operations described herein are not to be construed as necessarily requiring their performance in the particular order discussed or illustrated, unless specifically identified as an order of performance. It is also to be understood that additional or alternative steps may be employed.

[0057] References to "a microprocessor" and "a processor" or "the microprocessor" and "the processor" can be understood to include one or more microprocessors that can communicate in a stand-alone and/or a distributed environment(s), and can thus be configured to communicate via wired or wireless communications with other processors, where such one or more processor can be configured to operate on one or more processor-controlled devices that can be similar or different devices. Furthermore, references to memory, unless otherwise specified, can include one or more processor-readable and accessible memory elements and/or components that can be internal to the processor-controlled device, external to the processor-controlled device, and can be accessed via a wired or wireless network.

[0058] All of the publications described herein including patents and non-patent publications are hereby incorporated herein by reference in their entireties.

What is claimed is:

1. A method for analyzing a sensory stream from an electronic sensor in an energy-constrained environment, the method comprising:

(a) configuring a reconfigurable event driven hardware in communication with the electronic sensor to detect a trigger signature from the sensory stream, wherein the reconfigurable event driven hardware includes reservoir computing implementing:

(i) a capturing element configured to capture a temporal behavior of the sensory stream; and

(ii) a classifying element configured to classify an output of the capturing element to identify the trigger signature;

(b) placing a processor in a low power consumption mode while the reconfigurable event driven hardware monitors the sensory stream to detect the trigger signature; and

(c) after step (b), upon the reconfigurable event driven hardware detecting the trigger signature, communicating details of the trigger signature to the processor.

2. The method of claim **1**, further comprising using the processor to configure the reconfigurable event driven hardware to detect the trigger signature.

3. The method of claim **2**, further comprising the reconfigurable event driven hardware continuously monitoring the sensory stream to detect the trigger signature while the processor is in the low power consumption mode.

4. The method of claim **2**, further comprising configuring the reconfigurable event driven hardware via an Application Program Interface (API).

5. The method of claim **4**, further comprising the processor invoking a software routine in response to the communication from the reconfigurable event driven hardware.

6. The method of claim **1**, wherein the reservoir computing comprises a Liquid State Machine (LSM) comprised of a plurality of leaky-integrate-and-fire neurons.

7. The method of claim **6**, wherein the reservoir computing further comprises a Multi-Layered Perceptron Network (MLPN) comprised of a plurality of leaky-integrate-and-fire neurons.

8. The method of claim **7**, further comprising implementing the capturing element using the LSM and the classifying using the MLPN.

9. The method of claim **1**, further comprising, after step (c), deactivating the reconfigurable event driven hardware and using the processor for continuously monitoring the sensory stream.

10. The method of claim **1**, wherein the electronic sensor is at least one of an electrocardiograph and an electroencephalograph, and further comprising the configuring the reconfigurable event driven hardware to continuously monitor slow wave activity of a brain.

11. The method of claim **1**, further comprising providing the electronic sensor and the reconfigurable event driven hardware in a first enclosure and providing the processor in a second enclosure separate from the first enclosure.

12. The method of claim **1**, further comprising providing the processor and the reconfigurable event driven hardware in a first enclosure and providing the electronic sensor in a second enclosure separate from the first enclosure.

13. A system for analyzing a sensory stream in an energy-constrained environment comprising:

an electronic sensor producing a sensory stream;

a processor having a low power consumption mode; and

a reconfigurable event driven hardware in communication with the electronic sensor and the processor, the reconfigurable event driven hardware being configured to detect a trigger signature from the sensory stream, wherein the reconfigurable event driven hardware includes reservoir computing implementing:

(i) a capturing element configured to capture a temporal behavior of the sensory stream; and

(ii) a classifying element configured to classify an output of the capturing element to identify the trigger signature,

wherein, upon the reconfigurable event driven hardware detecting the trigger signature, the reconfigurable event driven hardware is operable to communicate details of the trigger signature to the processor while the processor is in the low power consumption mode.

14. The system of claim **13**, wherein the processor configures the reconfigurable event driven hardware to detect the trigger signature.

15. The system of claim **14**, wherein the reconfigurable event driven hardware continuously monitors the sensory stream to detect the trigger signature while the processor is in the low power consumption mode.

16. The system of claim **13**, wherein the reservoir computing comprises a Liquid State Machine (LSM) comprised of a plurality of leaky-integrate-and-fire neurons.

17. The system of claim **16**, wherein the reservoir computing further comprises a Multi-Layered Perceptron Network (MLPN) comprised of a plurality of leaky-integrate-and-fire neurons.